In the Claims:

Please amend claims 1 and 27. Please cancel claim 28. The claims and their status are shown below.

1. (Currently Amended) A method for labeling and identifying solid, liquid and gaseous substances (S1-n), comprising the steps of:

selecting at least one nucleic acid molecule from a first group of predefined nucleic acid molecules (N1-n), wherein each of the predefined nucleic acid molecules comprises an identification sequence section (IDS1-n),

contacting the substance (S1-n) with at least one predefined nucleic acid molecule (N1-n), thereby labeling the substance (S1-n),

providing a second group of nucleic acid molecules (N'1-n), wherein each nucleic acid molecule of the second group of nucleic acid molecules comprises a detection sequence section (IDP1-n) complementary to one of the identification sequence sections (IDS1-n),

contacting the nucleic acid molecule(s) (N1-n) selected from the first group ~~substance (S1-n)~~ with the nucleic acid molecules (N'1-n) provided from the second group under predefined hybridization conditions; and

detecting whether or not hybridization occurs, wherein whether or not hybridization occurs identifies the substance (S1-n).

2. (Previously presented) The method as claimed in claim 1, wherein the identification sequence section (IDS1-n) is located between two primer binding sequence sections (PBS1, PBS2).

3. (Previously presented) The method as claimed in claim 2, wherein said identification sequence section (IDS1-n) comprises two identification sequence sections (IDS-A, IDS-B).

4. (Previously presented) The method as claimed in claim 3, wherein the identification sequence sections (IDS-A, IDS-B) are complementary to one another.

5. (Previously presented) The method as claimed in claim 2, wherein the primer binding sequence sections (PBS1, PBS2) have the same melting point.

6. (Previously presented) The method as claimed in claim 1, wherein the nucleic acid molecules (N1-n) are amplified.

7. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecules (N1-n) are linked on at least one end to an agent which counteracts degradation caused by exonuclease.

8. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecule (N1-n) is provided with a coupling group (A, B, C, D-Z).

9. (Previously presented) The method as claimed in claim 8, wherein the coupling group (A, B, C, D-Z) is selected from the group consisting of: a biotin group, an amino group, a thiol group, and a hapten.

10. (Previously presented) The method as claimed in claim 1, wherein a molecule carrying a fluorophoric group (F11-n) is bound to the predefined nucleic acid molecule (N1-n).

11. (Previously presented) The method as claimed in claim 8, wherein the coupling group (A, B, C, D-Z) is labeled with a fluorophoric group.

12. (Previously presented) The method as claimed in claim 1 wherein the predefined nucleic acid molecules (N1-n) are bound to the substance (S1-n) and wherein the substance (S1-n) is selected from the group consisting of antibodies, lectins, receptors, nucleotide sequences, PNA sequences, peptides, proteins, sugars, and ligands.

13. (Previously presented) The method as claimed in claim1, wherein the predefined nucleic acid molecules (N1-n) are bound to particles (P) or are included therein.

14. (Previously presented) The method as claimed in claim 13, wherein the particles (P) are from 30 nm to 3 mm in size.

15. (Previously presented) The method as claimed in claim 13, wherein the particles (P) are silica, polystyrene, polyvinyl chloride, polyethylene, nylon or glass milk particles.

16. (Previously presented) The method as claimed in claim 13, wherein the particles (P) are selected from the group consisting of a viral capsid and a virus-like particle.

17. (Previously presented) The method as claimed in claim 1, wherein each of the second group of nucleic acid molecules (N'1-n) is bound to a predefined site on a solid surface.

18. (Previously presented) The method as claimed in claim 1, wherein hybridization of an identification sequence section (IDS1-n) with a complementary detection sequence section (IDP1-n) is detected by means of fluorescence.

19. (Previously presented) The method as claimed in claim 1, wherein at least two predefined nucleic acid molecules (N1-n) are added to the substance (S1-n) as a label.

20. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecules (N1-n) and/or the second group of nucleic acid molecules (N'1-n) are prepared synthetically.

21. (Previously presented) The method as claimed in claim 1, wherein the first group of predefined nucleic acid molecules (N1-n) and the second group of nucleic acid molecules (N'1-n) comprise nucleic acid analogs.

22. (Original) The method as claimed in claim 21, wherein the nucleic acid analogs are selected from the group consisting of PTO and PNA.

23. (Original) The method of claim 17, wherein the solid surface is selected from the group consisting of a chip, a microtiter plate, and film.

24. (Original) The method of claim 6, wherein said amplification is by PCR.

25. (Original) The method of claim 24, wherein said PCR uses fluorescently-labelled primers.

26. (Original) The method of claim 3, wherein said identification sequence sections (IDS-A, IDS-B) comprise primer binding sequence sections (PBS1, PBS2).

27. (Currently Amended) A method for identifying solid, liquid and gaseous substances (S1-n), said substance having been labeled with at least one nucleic acid molecule selected from a first group of predefined nucleic acid molecules (N1-n), wherein each of the predefined nucleic acid molecules comprises an identification sequence section (IDS1-n), comprising the steps of:

providing a second group of nucleic acid molecules (N'1-n), wherein each of the nucleic acid molecules of the second group of nucleic acid molecules comprises a detection sequence section (IDP1-n) complementary to one of the identification sequence sections (IDS1-n),

contacting the nucleic acid molecule(s) (N1-n) selected from the first group ~~substance (S1-n)~~ with the nucleic acid molecules (N'1-n) provided from the second group under predefined hybridization conditions; and

detecting whether or not hybridization occurs, wherein whether or not hybridization occurs identifies the substance (S1-n).

28. (Canceled)